

Ph.D. STUDENT SCHOLARSHIP

Institute of Science and Environment, University of Saint Joseph (Macao SAR)

Applications are invited for a full-time PhD student to develop a thesis under the research topic: “Effects of noise on hearing and development in the zebrafish *Danio rerio*”.

Background: Noise pollution is an increasing environmental problem and an inevitable consequence of growing cities. Knowing the biological implications of such environmental stressor is a step towards understanding how we cope with the noisy world and the importance of environmental protection measures. Investigators are only beginning to identify the implications of noise animal's ecology and fitness, including in humans.

Fishes are excellent vertebrate models to address questions regarding physiological adaptations to environmental factors, as they evolved in widely diverse habitats and possess many specialized morphological features that convey improved adaptation to particular environments. Species like zebrafish *Danio rerio* also offer technical advantages, combining rapid and accessible embryogenesis, genetic and genomic tools for systematic gene discovery and analysis, and *in vivo* visualization at a cellular level in a single organism. Zebrafish has a typical vertebrate inner ear at the cellular level and has become an especially attractive model for the study of the development and function of the vertebrate inner ear.

Description: The student will rely on the zebrafish model to investigate the impact of noise exposure on development of the inner ear, auditory sensitivity and behavioral traits. The project implies the use of a variety of research methods, such as electrophysiology recordings, immunohistochemistry, imaging and gene expression techniques (qPCR, transcriptomics).

Research activities will take place mostly at the USJ science laboratories (Macao), but availability to work in other labs abroad (USA and/or Portugal) is necessary. The candidate will be supervised mostly by the project coordinator, Prof. Raquel Vasconcelos (USJ), and eventually by the team member Prof. Andrew Bass (Cornell University, USA).

The PhD student is expected to develop research, write a thesis and publish data in international peer-reviewed scientific journals, as well as, to participate in general lab management tasks.

Qualifications required: Suitable candidates are those with a background (Master degree or equivalent experience) in one of the fields: Biology, Medicine, Biochemistry, Biotechnology, Environmental Sciences or related fields. Students are expected to communicate mostly in English. Chinese language will be an advantage but not compulsory. Laboratory experience in molecular techniques and/or electrophysiology is preferable, but training will also be provided.

Conditions: 36 months duration, starting on September 2016; stipend - 12.500 MOP/month (1564 USD/month). The work will be funded by an FDCT/Macao research grant: project “Listening to the Environment: Importance of Early Acoustic Experience on Hearing and Development in Zebrafish”, ref n. 036/2015/A1. Tuition fee is not funded.

Selection criteria: Experience with molecular techniques, electrophysiology and/or behavior: 40%; academic qualifications/ publications: 40%; interview, motivation letter and referees: 20%.

How to apply: Candidates should send an email with a copy of the CV (English) and a motivation letter to raquel.vasconcelos@usj.edu.mo, along with 3 contacts of potential referees. Candidates should also use this contact in case for any queries regarding this application. Only short-listed applicants will be contacted for final selection and interview. Position will remain opened until filled, but applications are expected before July 10th, 2016.

For details on the research group: <http://www.sel.usj.edu.mo/people-2/raquel-vasconcelos/>
Posted on May 18th, 2016.